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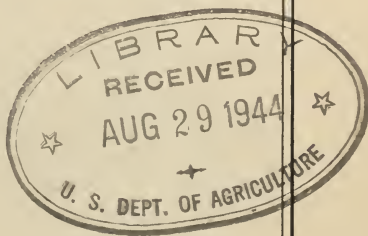
# THE CITRUS PROGRAM

## UNDER THE AGRICULTURAL ADJUSTMENT ADMINISTRATION

By

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## FOREWORD

The methods to be followed in improving farm income for any particular commodity must be based upon the economic facts as to that commodity.

This study presents an exhaustive analysis of the facts as to the citrus industry, using the most dependable methods of statistical analysis.

Briefly, this study shows:

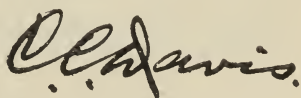
(1) Production has increased sharply at the very time of greatly reduced consumer buying power.

(2) For both oranges and grapefruit, excessive marketings result in sharp reductions in incomes to farmers; and reductions in marketings to normal levels would produce material increases in returns to producers.

(3) Present growing capacity will result in still more excessive production in the near future.

(4) Concerted action by the industry is necessary to regulate marketings to the quantity which consumers can take without excessive reductions in returns to producers.

This careful appraisal of the economic facts for citrus fruits provides a firm foundation on which the citrus industry can base its program under the Agricultural Adjustment Act.

A handwritten signature in dark ink, appearing to read "C. C. Davis". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

*Administrator, Agricultural Adjustment Act.*

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## SUMMARY

The farm value of oranges and grapefruit averaged \$133,800,000 for the five predepression seasons, 1924 to 1928. For the marketing season 1932-33 the farm value of oranges and grapefruit fell to \$68,562,000, or only one half of the predepression amount. This decline affected directly the economic welfare of approximately 60,000 individual citrus growers, or a total of about 300,000 persons, located in the concentrated but widely separated citrus districts of Florida, California, Arizona, and Texas.

The decline in value of citrus fruits was due only in part to the decline in the purchasing power of consumers of citrus fruits. In a very large measure the decline in income was due to greatly increased production of citrus crops. This increase came at a time when the markets could absorb such great volumes only at prices which meant severe hardship to the bulk of the citrus growers.

During the three seasons from 1930 to 1933, commercial supplies of oranges marketed in the United States averaged 40,917,000 boxes per year. These marketings were 11,557,000 boxes, or 40 percent in excess of average marketings from 1923 to 1927 of 29,360,000 boxes. In terms of oranges per capita this represented an increase from 50.4 oranges per person to 65.6 oranges per person.

Grapefruit production showed a similar increase. The quantity of grapefruit marketed in the United States in fresh form increased from an average of 8,199,000 boxes for the five seasons beginning with 1923 to 11,428,000 boxes for the three seasons beginning with 1930, or 39.4 percent.

The nature of the citrus industry is such that it is impossible for citrus growers, acting individually, to adjust citrus production to declining demand and to cope with excessive surpluses. Citrus groves represent a large investment. The yielding capacity of trees increases for many years, and once they reach full yielding capacity, they live and bear to a very old age. Many trees now bearing at full capacity are as old as 40 years. Neglect of the tree means the loss of the tree. Barring any guaranty as to what other growers are doing, the individual grower must seek to obtain full output from his orchard.

The present relation between commercial shipments of citrus products and prices to farmers is such that growers receive materially less gross income from a large crop than they receive from a moderate or small crop. This same relation is true of many other farm products.

Citrus crops are subject to wide variations in yield from year to year and the product is perishable. If the number of trees were reduced to those needed to supply the market in average years, supplies would be excessive in years of high yield, and insufficient in years of low yield. It is therefore necessary to develop some method of organizing the industry so as to control the volume shipped in each year, rather than to attempt to control directly acreage or tree numbers.



Likewise it is desirable to control shipments so as to produce reasonable income to growers, rather than permit unchecked competition to drive the purchasing power of citrus fruits down to the vanishing point in years of large supplies.

If growers bring to maturity all the young and nonbearing trees the present acreages would produce, in favorable years, a combined crop approaching 100,000,000 field-run boxes, or nearly 60 percent in excess of production during the 5 years, 1924-28. Such crops, thrown on the market without regulation would still further destroy the purchasing power of the growers and disrupt the economic organization of the producing regions.

Through forces not under their control citrus growers have found themselves in a position of supplying more fruit to the market than they did prior to the depression, but being able to purchase only about half as many products and services in exchange for it. It is essential that all citrus areas and all parts of the industry participate in a program designed for the restoration of the economic status of the industry.

The marketing agreement applying to oranges and grapefruit in Florida was signed by shippers handling 72 percent of the fruit by volume, and became effective December 14, 1933. The California and Arizona agreement carried signatures representing 88 percent of the volume in those States and the Texas agreement was signed by shippers representing 87 percent of the Texas volume. The California and Arizona agreement became effective December 14, 1933, and the Texas agreement became effective December 26, 1933. Each agreement provided for coordination between the areas.

All statements made in this report are based upon analysis of statistical data. These data were obtained from the following sources: United States Census reports, reports and records of the Bureau of Agricultural Economics, The Federal Reserve Board, The New York Daily Fruit Reporter, and the California Fruit Growers' Exchange.



## THE CITRUS PROGRAM UNDER THE AGRICULTURAL ADJUSTMENT ADMINISTRATION

By E. W. BRAUN, *Senior Agricultural Economist*,<sup>1</sup> General Crops Section, Agricultural Adjustment Administration

### INTRODUCTION

Oranges and grapefruit rank among the principal fruit crops of the United States, being exceeded in total farm value only by apples. Anything which affects the economic status of citrus is of vital interest to the general welfare of the districts in which citrus is produced. Citrus culture is specialized in nature and is the prime enterprise of producers in areas where citrus fruit is produced on a commercial basis. The 1930 census reports 24,363,212 orange trees and 5,108,164 grapefruit trees of bearing age with 46,558 growers reporting oranges and 20,598 reporting grapefruit. Many growers have both oranges and grapefruit. After making reasonable allowance for duplication of farms reported, it is estimated that there are approximately 60,000 producers in continental United States engaged in the commercial production of oranges and grapefruit. This means that approximately 300,000 persons are directly connected with the production of oranges and grapefruit. An estimate of the number of persons directly connected with citrus in Puerto Rico is not at hand.

During the 5 years, 1924 to 1928, prior to the depression, the United States farm value of oranges and grapefruit averaged \$133,800,000. By the 1932-33 season the farm value totaled only \$68,562,000 or only one half of the previous level. This decline in farm value came as a result of the serious decline in citrus prices occasioned by the increasing supplies and reduced consumer buying power. The farm value of oranges and grapefruit will continue to be relatively low as long as market supplies are in excess of the amount which consumers are willing or able to purchase at prices remunerative to producers.

This fact is of particular significance in Florida because the farm value of oranges and grapefruit makes up so large a proportion of the total farm value of crops in that State. In 1930 the farm value of oranges and grapefruit in Florida amounted to 44 percent, or nearly one half of the total value of all crops in Florida; in 1932 oranges and grapefruit were equal to 40 percent of the total farm value of all crops.

A marketing agreement together with a license adopted and operated on a basis that includes the entire industry offers a solution for coping with burdensome supplies of oranges and grapefruit and thereby increasing returns to growers. This study undertakes to show the economic need for surplus-control measures in the citrus industry.

<sup>1</sup> The writer wishes particularly to express his appreciation to S. R. Newell and G. Burmeister of the Bureau of Agricultural Economics for contributing generously of their time and data in the preparation of this study.

## CHANGES IN CONSUMER BUYING POWER

From 1921 to 1929 citrus growers experienced an unusual increase in the demand for oranges and grapefruit. It was during this period that the incomes of many classes of people increased. The market for citrus fruits expanded because people who were already in the habit of buying oranges and grapefruit found themselves in a position to buy more oranges than they had formerly been accustomed to, and many people who had formerly not purchased oranges and grapefruit at all could afford to purchase the fruit that had previously seemed a luxury to them. In strict economic terms, an increase in demand is characterized by a larger volume being taken at the same price or the same volume at a higher price. An increase in demand occurred to a striking degree during the period from 1921 to 1929. The general increase in consumers' demand during this period is vivid in the minds of practically every adult in this country. The decline in consumers' purchasing power which has occurred since 1929, the decline in wages and incomes, to say nothing of the number of people who lost all sources of income, is also common knowledge.

There are a number of measures of business activity and consumers' purchasing power. Among those commonly used is an index of industrial production prepared by the Federal Reserve Board. Table 1 shows this index together with factory pay rolls and loans and investments of all reporting member banks of the Federal Reserve System.

TABLE 1.—*Indicators of consumers' purchasing power*

[1923-25=100]

Season, October to September	Indus- trial pro- duction	Factory pay rolls	Loans and invest- ments, less time deposits
	1	2	3
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1921-22-----	78.3	76.2	88.3
1922-23-----	101.5	100.3	92.9
1923-24-----	94.3	98.1	93.4
1924-25-----	101.5	98.4	101.8
1925-26-----	107.2	104.2	104.8
1926-27-----	107.8	103.4	105.8
1927-28-----	107.0	100.6	112.5
1928-29-----	120.2	107.9	116.5
1929-30-----	102.1	94.4	119.0
1930-31-----	84.0	70.8	116.5
1931-32-----	66.2	48.9	103.9
1932-33-----	74.8	44.4	98.5

## SOURCES OF DATA

Column 1, 1921-31, Federal Reserve Bulletin, v. 18, no. 3, p. 194, March 1932.

1932-33, Federal Reserve Bulletin, monthly issues.

Column 2, 1921-22, Federal Reserve Bulletin, v. 15, no. 11, p. 711, November 1929.

1923-31, U.S. Department of Commerce, Bureau Foreign and Domestic Commerce, Survey of Current Business, 1932 Annual Supplement.

1932-33, Federal Reserve Bulletin, monthly issues.

Column 3, 1921-31, compiled from Nineteenth Annual Report of the Federal Reserve Board, 1932, p. 136.

1933, Federal Reserve Bulletin, monthly issues.

Allowance was made for a change in the number of cities reporting.

This table is prepared to coincide with the marketing season for citrus fruit; it is based on a 12-month period beginning with October and extending through September of the following year. Marketing

seasons will often be referred to by giving the years in which they begin. The index of industrial production in the United States rose from 78.3 in 1921 to 120.2 in 1928—considering production during the calendar-year period 1923 to 1925 as 100. This represents an increase of 54 percent during a period of 7 years. Between the marketing season of 1928–29 and the marketing season 1932–33, industrial production declined to 74.8, which is a decline during that short period of time of approximately 38 percent.

Factory pay rolls, which reflect a combination of employment and wage rates, rose from 76.2 in 1921 to 107.9 for the marketing year 1928–29. This index of factory pay rolls declined to 44.4 for the marketing season 1932–33.

The trend of loans and investments, minus time deposits, for the country as a whole, corresponds in a large measure to the trend of the buying power of salaried workers and the purchasing power of those classes of people in the upper income groups. When loans and investments of all member banks of the Federal Reserve System are placed on an index basis, they reflect a rise from 88.3 in 1921 to 119.0 for the crop year 1929–30, considering 1923–24 through 1925–26 as 100. By the crop year of 1932–33 this index had fallen to 98.5.

The indexes just discussed register a marked decline in recent years.<sup>2</sup> Unless citrus growers can, in some measure, adjust their supplies of citrus fruits to changes in the demand of the bulk of the consumers of citrus fruits, it will be necessary for them to experience undue economic stress during periods of market contraction or during seasons of high yields.

### PARITY PRICES

The farm price of citrus fruits during 1932–33 averaged considerably below pre-war parity, as defined in the Agricultural Adjustment Act. Considering such information as is now available, the combined weighted-average price of oranges and grapefruit for the whole industry during the 1909 to 1913 seasons was equal to \$1.33 per box. The 1932–33 weighted-average price was \$1.07 a box, which was 23 percent below parity. Since the 1932–33 season the index of prices paid by farmers for things they buy has risen several points. Due to the fact that the index of things that farmers buy is changing and because the marketing agreement and license were in operation, and, further, because comparisons are based on a weighted average, an adequate parity comparison for the current season cannot be made until the season is practically closed.

In considering parity, it is necessary to keep in mind a number of things. For example, evidence presented at the public hearing for the marketing agreement on citrus fruits indicates that more field-run fruit is required to yield a packed box than was true in the base period. Also the index of prices paid by farmers for things they buy is a national average and does not necessarily fully reflect the increase in prices paid by citrus growers. In the case of citrus fruit comparison with the pre-war base does not adequately measure the distress of citrus growers at the present time. A post-war base, 1924 to 1928, reflects much more adequately the economic distress now prevalent

<sup>2</sup> A tabulation of key indexes of the depression is given in "Economic Bases for the Agricultural Adjustment Act" by Mordecai Ezekiel and Louis H. Bean, U.S. Department of Agriculture, December 1933, p. 4.



in the citrus industry. Table 2 shows the purchasing power parity of oranges and grapefruit expressed on both pre-war and post-war bases.

TABLE 2.—Parity prices of citrus fruit

EXPRESSED ON A PRE-WAR BASE

Crop year	Farm price <sup>1</sup>	Index of things farmers buy <sup>2</sup>	Parity price <sup>3</sup>	Below parity	Farm price as percent of parity
	1	2	3	4	5
	<i>Dollars</i>		<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>
Average, 1909-13.....	1.33	100.0	1.33	-----	100.0
1928-29.....	1.97	152.3	2.03	0.06	97.0
1929-30.....	3.49	148.2	1.97	+1.52	177.2
1930-31.....	1.68	130.7	1.74	.06	96.6
1931-32.....	1.39	111.9	1.49	.10	93.3
1932-33.....	1.07	104.7	1.39	.32	77.0
1933-34.....	-----	116.0	1.55	-----	-----

EXPRESSED ON A POST-WAR BASE

Average, 1924-28.....	2.78	100.0	2.78	-----	100.0
1928-29.....	1.97	99.7	2.77	0.80	71.1
1929-30.....	3.49	97.1	2.70	+ .79	129.3
1930-31.....	1.68	85.6	2.38	.70	70.6
1931-32.....	1.39	73.3	2.04	.65	68.1
1932-33.....	1.07	68.6	1.91	.84	56.0

<sup>1</sup> Weighted average farm price of oranges and grapefruit using production as weights. Subject to revision; evidence presented at the public hearing indicates that more field-run fruit is now required to yield a packed box than was true in the base period.

<sup>2</sup> A general index applying to the United States as a whole.

<sup>3</sup> Calculated by multiplying column 2 by the average price for the base period.

During the five seasons 1924-28 the farm price of oranges and grapefruit averaged \$2.78 a box; the 1932-33 season price was only 56 percent of this average. The citrus industry has not been in a condition of distress for so long a period of time as some of the staple agricultural-products industries, but unless something is done to prevent it, the prospects for this industry suggest a period of economic distress such as has been experienced by the producers of crops designated as basic in the Agricultural Adjustment Act.

#### INCREASE IN THE COMMERCIAL SUPPLY OF ORANGES AND GRAPEFRUIT DURING THE DEPRESSION

Per capita supplies of oranges based upon the United States commercial production plus imports from Puerto Rico less exports to foreign countries amounted to 29,360,000 boxes. At 200 oranges per box, this is equal to 50.4 oranges per person per year during the 5 seasons 1923-27. During the past 3 seasons of severe business depression, supplies increased to 40,917,000 boxes, which is equal to 65.5 oranges per person and represents an increase of 30 percent in per capita supplies of commercial oranges. In other words, per capita supplies of oranges in recent years have been nearly one third greater than was true prior to the depression. So large an increase

in the per capita supply during a period of declining purchasing power could not be sold except at prices distressingly low to producers.

It was impossible for citrus producers, acting individually, to decrease the market supply of citrus fruit to correspond with the decline in demand. Not only were they unable to do this, but they were also unable to avoid the increased production which took place. Trees which had been planted during a period when citrus production was profitable as compared to other types of farm products, came into commercial bearing at the beginning of the business depression.

A similar situation prevailed in the case of grapefruit. Prior to the depression, during the seasons 1924-28, the per capita supply of fresh grapefruit available for consumption in continental United States amounted to 4.6 grapefruit per person. The average supply for the 3 depression years 1930 to 1932 amounted to 5.9 grapefruit per person or an increase of 28 percent. This situation is analogous to the orange situation and for the same reasons. Per capita supplies of oranges and grapefruit are given in detail in tables 3 and 4.

TABLE 3.—*United States commercial production, receipts from Puerto Rico, exports, and per capita supply of oranges*

Crop year <sup>1</sup>	Commercial production	Receipts from Puerto Rico	Domestic exports	Supply available for consumption	Per capita supply
	1	2	3	4	5
	1,000 boxes	1,000 boxes	1,000 boxes	1,000 boxes	Oranges
1909-10.....	16,041	278	911	15,408	33.4
1910-11.....	19,394	378	1,260	18,512	39.5
1911-12.....	17,329	243	1,253	16,319	34.3
1912-13.....	12,108	375	880	11,603	24.0
1913-14.....	24,216	319	1,824	22,711	46.4
1914-15.....	23,172	248	1,584	21,836	44.0
1915-16.....	21,640	467	1,691	20,416	40.5
1916-17.....	26,968	465	1,951	25,482	49.9
1917-18.....	11,202	557	938	10,821	20.9
1918-19.....	23,455	385	1,634	22,206	42.3
1919-20.....	23,395	328	1,591	22,132	41.5
1920-21.....	29,913	167	2,174	27,906	51.6
1921-22.....	20,568	508	1,393	19,683	35.8
1922-23.....	31,183	615	2,138	29,660	53.2
1923-24.....	34,619	218	2,620	32,217	56.9
1924-25.....	28,062	370	1,978	26,454	46.1
1925-26.....	31,290	416	2,628	29,078	49.9
1926-27.....	35,870	365	3,620	32,615	55.2
1927-28.....	28,431	546	2,542	26,435	44.1
1928-29.....	47,340	22	5,582	41,780	68.8
1929-30.....	29,018	221	2,180	27,059	43.9
1930-31.....	48,181	97	4,936	43,342	69.9
1931-32.....	42,726	39	3,202	39,563	63.4
1932-33.....	43,227	13	3,394	39,846	63.4
1933-34.....	41,635				

<sup>1</sup> Season: California, Nov. 1 to Oct. 31; Florida and others, Sept. 1 to Aug. 31.

#### SOURCES OF DATA

Column 1, U.S. Dept. Agr., Bur. Agr. Econ., Foreign Agricultural Service, Statistics Relating to the Citrus Industry, 1933, mimeographed, Washington, D. C., December 1933, p. 4.

Columns 2 and 3, 1909-26, H. R. Wellman and E. W. Braun, Oranges, Series on California Crops and Prices, Calif. Agr. Exp. Sta. Bul. 457, p. 55, 1928.

1927-32, same as column 1, from p. 15.

Column 4, sum of columns 1 and 2 less column 3.

Column 5, supply available for consumption converted to number of oranges on basis of 200 oranges per box and divided by population of continental United States, as secured from U.S. Department of Commerce, Bureau Foreign and Domestic Commerce, Statistical Abstract of the United States, 1933, p. 10.

TABLE 4.—*United States commercial production, imports, exports, and per capita supply of fresh grapefruit, 1922-23 to 1932-33 seasons*

Crop year <sup>1</sup>	Commer- cial pro- duction	Receipts from Puerto Rico	General imports	Domestic exports <sup>2</sup>	Supply available for con- sumption	Per capita supply
	1	2	3	4	5	6
	1,000 boxes	1,000 boxes	1,000 boxes	1,000 boxes	1,000 boxes	Grape- fruit
1922-23 -----	7, 463	462	257	260	7, 922	4. 6
1923-24 -----	8, 278	719	178	305	8, 870	5. 1
1924-25 -----	8, 620	518	209	430	8, 917	5. 0
1925-26 -----	6, 928	815	216	405	7, 554	4. 2
1926-27 -----	7, 659	748	202	624	7, 985	4. 4
1927-28 -----	7, 450	888	62	731	7, 669	4. 2
1928-29 -----	10, 664	152	106	969	9, 953	5. 3
1929-30 -----	8, 716	1, 002	145	750	9, 113	4. 8
1930-31 -----	13, 305	646	89	1, 240	12, 800	6. 6
1931-32 -----	12, 017	332	137	1, 070	11, 416	5. 9
1932-33 -----	10, 720	191	47	889	10, 069	5. 2
1933-34 -----	8, 800					

<sup>1</sup> Season: Florida, Texas, and Arizona, Sept. 1 to Aug. 31; California, Nov. 1 to Oct. 31; receipts from Puerto Rico, Nov. 1 to Oct. 31; general imports, Nov. 1 to Oct. 31; exports, Sept. 1 to Aug. 31.

<sup>2</sup> Exports from continental United States from 1926-27 to 1932-33. Exports from Puerto Rico to foreign countries included prior to 1926-27.

#### SOURCES OF DATA

Column 1, U.S. Dept. Agr., Bur. Agr. Econ., Foreign Agr. Service, Statistics Relating to the Citrus Industry 1933, mimeographed publication, Washington, D.C., December 1933, p. 23.

Columns 2 and 3, 1922-23 to 1931-32, Wellman, H. R., California Outlook Charts and Tables, mimeograph. 1932-33, U.S. Dept. Agr., Bur. Agr. Econ., Foreign Agricultural Service.

Column 4, 1922-23 to 1925-26, same as column 2.

1926-27 to 1932-33, same as column 1, p. 33.

Column 5, sum of columns 1, 2, and 3, less column 4.

Column 6, supply available for consumption converted to number of grapefruit on basis of 64 grapefruit per box and divided by population of continental United States as secured from U.S. Dept. Com., Bur. For. and Dom. Commerce, Statistical Abstract of the United States, 1933, p. 10.

#### SHORT-TIME CURTAILMENT OF PRODUCTION DIFFICULT

The citrus industry is of such a nature that production cannot be readily curtailed. The preparation of land for the planting of citrus trees and the actual expense of planting and caring for these trees until they reach a stage of commercial production involves a large investment per acre. Once the trees get into commercial production their yielding capacity increases for many years. There is practically no evidence that citrus trees as a whole in the United States have reached a period of declining yields because of old age. The oldest citrus groves in Florida date from the killing frost which occurred in 1895, and many orchards in California are 40 years of age and still carry full yielding capacity.

Neglect in the culture of citrus trees means the loss of the trees. From a cultural standpoint, therefore, there is little that producers can do to adjust production to declining consumer demand without heavy capital loss. Short time adjustment, if it is to be accomplished, must be applied to market supplies rather than to production.

#### SEASONAL COMPETITION BETWEEN AREAS

Orange shipments are made in large volume throughout the year. The crop movement season begins in October and extends to the following September. During the five seasons 1928-29 through and including 1932-33, shipments of oranges, including boat movement,



amounted to slightly more than 4,000 cars during the month of October, reached 9,000 cars in March, and then gradually declined to approximately 4,000 cars in September, as is shown in table 5. The Florida season begins in October and extends through June. The California navel season begins with November and extends into the following June. California valencia shipments begin in March, reach a peak before the end of the Florida season, and then gradually decline, completing their season in November. Texas and other States ship a small volume during the 5 months, October to February.

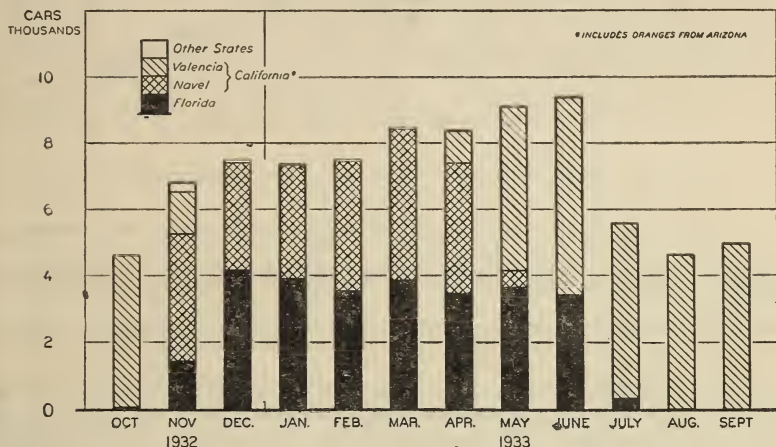


FIGURE 1.—SEASONAL SHIPMENTS OF ORANGES BY STATES OF ORIGIN, 1932-33 SEASON

California ships oranges in volume throughout the year; the valencia season overlaps the navel season. The heaviest movement from Florida occurs during the winter and spring months. Normally shipments from Florida are not as heavy during May and June as was true in 1933. (Data on seasonal movement are given in table 5.)

Figure 1 shows the extent of the competition between the different States.

TABLE 5.—Seasonal shipments of oranges, by months and States of origin, 1932-33 season <sup>1</sup>

	Florida	California and Arizona		Texas	Other States	Total, 1932-33	5-year average, 1928-29, 1932-33
		Navels	Valencias				
	Cars	Cars	Cars	Cars	Cars	Cars	Cars
October.....	40	36	4,527	2	20	4,625	4,280
November.....	1,454	3,825	1,274	7	255	6,815	7,631
December.....	4,185	3,228		24	67	7,504	9,036
January.....	3,943	3,413	6	20	7	7,389	8,740
February.....	3,562	3,875	7	47		7,491	8,650
March.....	3,893	4,529	45	2		8,469	9,622
April.....	3,477	3,912	991			8,380	8,879
May.....	3,657	478	4,958			9,093	8,518
June.....	3,429		5,947			9,376	6,274
July.....	338		5,236			5,574	5,445
August.....	9		4,616			4,625	4,656
September.....	2		4,960			4,962	4,335
Total.....	27,989	23,296	32,567	102	349	84,303	86,066

<sup>1</sup> Shipments of mixed citrus and truck movement direct to market not included.

SOURCE OF DATA: Based on data obtained from Division of Fruits and Vegetables and Division of Statistical and Historical Research.

Market prices exhibit further evidence of the competition between areas. Figure 2, showing the New York auction price of Florida

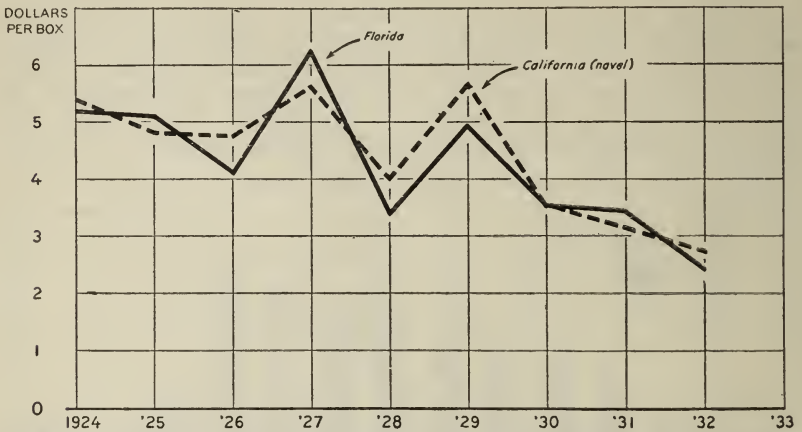


FIGURE 2.—NEW YORK AUCTION PRICES OF FLORIDA ORANGES AND CALIFORNIA NAVAL ORANGES BY SEASONS, 1924-32. (MARKETING SEASON BEGINS IN AUTUMN)

Market prices of Oranges from Florida and California are closely correlated. (Data from the Division of Statistical and Historical Research of the Bureau of Agricultural Economics.)

oranges and California navels for a period of nine seasons, reveals that sometimes Florida oranges bring a higher price than California navels and that sometimes the reverse is true. Considering seasons as a whole they consistently move in the same direction.

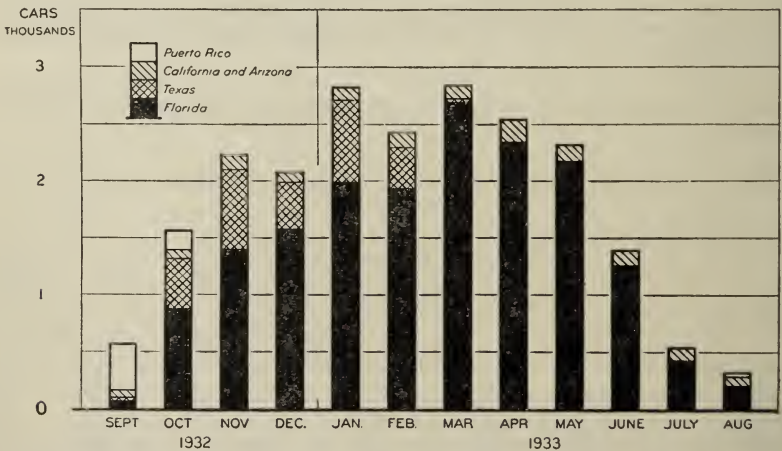


FIGURE 3.—SEASONAL SHIPMENTS OF GRAPEFRUIT BY STATES OF ORIGIN, 1932-33 SEASON

Shipments of grapefruit from Texas compete with shipments from Florida during the fall and winter months. (Data from table 6.)

Total grapefruit movement during the 1932-33 season amounted to about 21,550 cars. Florida, which is by far the principal source of grapefruit supplies, contributed 79 percent or a total shipment of 17,000 cars. Texas shipped 2,600 cars, California and Arizona to-

gether accounted for 1,300 cars, while from Puerto Rico receipts amounted to 650 cars.

Florida grapefruit begins moving in September and shipments extend throughout the year but are heaviest during the months of January to May. Texas ships in volume from September to February. California and Arizona ship a relatively small volume throughout the year. Shipments from Puerto Rico to the United States are made during months when movement within the United States is light. A summary of the seasonal movement by areas is given in table 6 and shown graphically in figure 3. The above survey of seasonal movement is conclusive evidence of regional competition and indicates that it would be futile to attempt to influence the price of oranges from one section only, without reference to competing producing areas. In any effective attempt to influence price the industry must be dealt with as a whole.

TABLE 6.—*Seasonal shipments of grapefruit from principal producing areas, 1932-33 season*<sup>1</sup>

	Florida	Texas	California and Ari- zona	Receipts from Puerto Rico <sup>2</sup>	Total 1932-33	5-year average, 1928-29, 1932-33
	1	2	3	4	5	6
	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>
September.....	68	17	73	408	566	435
October.....	878	443	77	166	1,564	2,290
November.....	1,404	697	118	15	2,234	2,577
December.....	1,583	409	79	7	2,078	2,441
January.....	1,987	716	115	1	2,819	3,484
February.....	1,936	357	131	8	2,432	3,219
March.....	2,694	29	116	5	2,844	3,573
April.....	2,337	-----	200	3	2,540	2,992
May.....	2,169	-----	147	2	2,318	1,925
June.....	1,256	-----	130	1	1,387	679
July.....	430	-----	111	3	544	245
August.....	205	-----	79	33	317	129
Total.....	16,947	2,668	1,376	652	21,643	23,989

<sup>1</sup> Shipments of mixed citrus and truck movement direct to market not included.

<sup>2</sup> Shipments from Puerto Rico to United States relatively low in 1932-33, but the movement given does represent the months during which Puerto Rican grapefruit competes with grapefruit grown in continental United States. The volume for 1931-32 was 924 cars, and 1,800 cars in 1930-31. Receipts from Puerto Rico converted from boxes to cars on basis of 360 boxes per car.

#### SOURCES OF DATA

Columns 1, 2, and 3, U.S. Department of Agriculture, Crops and Markets, monthly issues.

Columns 4 and 5, U.S. Department of Agriculture, Bureau of Agricultural Economics, Foreign Agricultural Service, Statistics Relating to the Citrus Industry, mimeograph, Washington, D.C., December 1933, pp. 25 and 27.

#### TREND OF CITRUS ACREAGE AND PRODUCTION

The combined production of oranges and grapefruit in the United States has been increasing at an average rate of about 6 percent a year for the past 14 years. In the continental United States the combined acreage of orange and grapefruit trees amounts to about 747,000 acres, nearly a fifth of which is not yet of bearing age. Of the 611,000 acres of bearing trees, more than half are not yet 15 years old, the age of full production. In view of the large proportion of young trees that now constitute the bearing acreage and the high percentage of nonbearing trees, it seems certain that, barring unusual



loss of acreage through widespread abandonment or losses caused by weather, the upward trend in production that has been evident during the past 14 years can be expected to continue at about the same rate for at least another 5 years.

With only average conditions prevailing, the present bearing acreage is sufficient to produce an orange and grapefruit crop in excess of 75,000,000 boxes, and with conditions as favorable as that reported in 1930 the crop could amount to nearly 82,000,000 boxes. If the present combined acreage of oranges and grapefruit continues to develop under average conditions, it will be easily possible within the next 5 years to have crops approaching 100,000,000 boxes produced under favorable weather conditions in all districts in the same season, as

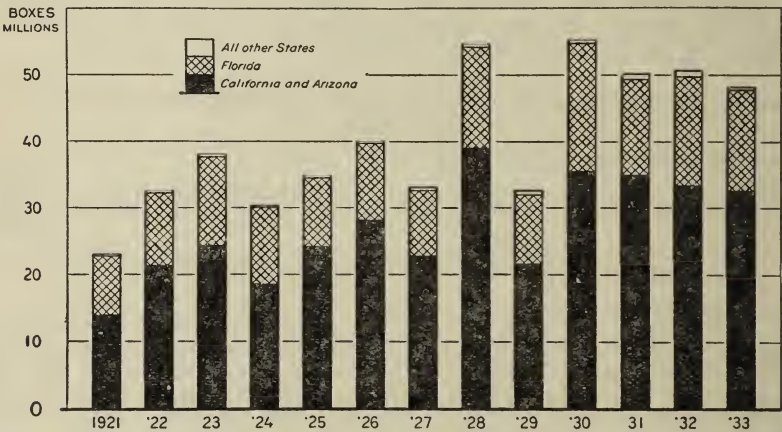


FIGURE 4.—UNITED STATES PRODUCTION OF ORANGES BY STATES BY CROP SEASONS 1921-33 (CROP SEASON BEGINS IN AUTUMN)

United States production of oranges for the 4 years 1930-33 averaged 65 percent larger than the four crops of 1921-24. California produces 67 percent of the total, Florida 31 percent and other States 2 percent. (Data from the Division of Crop and Livestock Estimates, Bureau of Agricultural Economics.)

compared with 63,539,000 boxes, the average production for the 5 years 1928 to 1932.

Total United States orange acreage now amounts to about 535,000 acres, of which 460,000 acres, or 86 percent is of bearing age. Of the acreage in bearing, 62 percent is estimated to be 15 years old or older, 18 percent between 10 and 15 years, and 20 percent between 5 and 10 years. Florida now has approximately 260,000 acres, of which 221,000 are of bearing age and 39,000 are not of bearing age. The bearing acreage in Florida, as a whole, has ceased to expand and is now probably declining slightly. During the last 3 years plantings were less than half those of the previous 3 years. In California there are about 237,000 acres in oranges, of which 211,000 are in bearing. About 98,000 of the bearing acres are Washington Navels and miscellaneous varieties, and 113,000 acres Valencias. The bearing acreage of Valencias continues to expand and the majority of recent plantings have been of this variety. The bearing acreage of Washington Navels, on the other hand, has tended downward slightly during the last 2 years. Acreage of oranges in Texas and Arizona has been increasing during recent years and is now estimated at about 19,000 acres bearing, and 8,200 acres not yet of bearing age.

In Louisiana, Alabama, and Mississippi, production is largely of Satsuma oranges. The combined acreage in these States is approximately 11,500 acres, of which about 9,300 are of bearing age.

Production of oranges for the country as a whole averaged about 30,988,000 boxes for the period 1921-24. During the next 4-year period, 1925-28, production averaged 40,693,000 boxes and during the last 4 years, 1929-32, the average production was about 47,246,000 boxes, which represents an increase of nearly 52 percent over the 1921-24 average. With bearing capacity per tree increasing up to 15 years of age and the large proportion of trees that have not yet attained 15 years, it is evident that, barring unusual loss of acreage, the average production during the coming 4 years may be expected to

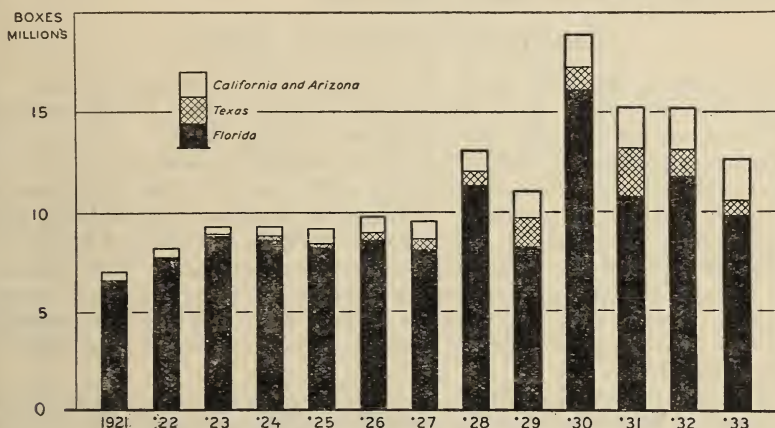


FIGURE 5.—UNITED STATES PRODUCTION OF GRAPEFRUIT BY STATES BY CROP SEASONS, 1921-33 (CROP SEASON BEGINS IN AUTUMN).

United States grapefruit crops for the 4 years, 1930-33, averaged 84 percent larger than the four crops of 1921-24. Florida produces 79 percent of the total, California and Arizona, 11 percent, and Texas 10 percent. (Data from the Division of Crop and Livestock Estimates, Bureau of Agricultural Economics.)

exceed that of the past 4-year period. The recent trend in orange production by States is shown graphically in figure 4.

With below-average conditions prevailing for the 1933-34 crop the forecast of production on February 1, 1934, was placed at 47,328,000 boxes. With average growing conditions, the present bearing acreage is sufficient to have produced 56,000,000 boxes, while with growing conditions equal to those of 1930 it would have produced an orange crop in excess of 60,000,000 boxes.

There are about 212,000 acres of grapefruit trees of all ages in the United States. Close to 30 percent of the total acreage is not yet of bearing age. For the production of the 1933-34 crop, there are about 151,000 acres of which only about one fourth is as much as 15 years old and therefore considered in full production and about half is estimated to be between 5 and 10 years old.

Florida has about 90,000 acres of grapefruit trees, of which approximately 9 percent is not yet of bearing age. Of the 92,000 acres in Texas, about 47 percent is nonbearing. In California and Arizona the grapefruit acreage amounts to about 30,000 with about one third under bearing age.

The trend of total production has been steadily upward since the beginning of the industry. For the 4 years, 1921-24, the average production was 8,554,000 boxes, while during the 4 years, 1929-32, production averaged 15,200,000 boxes, an increase of 78 percent. The production trend of grapefruit is shown graphically in figure 5.

With approximately half of the bearing grapefruit trees under 10 years old, and with about 1 tree of nonbearing age to every 2 trees of bearing age now in groves, it seems reasonable to expect the upward trend in production that has been in evidence for the last decade or more, to continue. Unless natural or economic forces intervene to check the rapid increase in production that appears in prospect, grapefruit producers may expect their marketing problems to become more acute in the next few years.

### RELATION OF PRICES TO SUPPLY

Changes in the farm price of oranges from year to year may be accounted for, first, by commercial supplies offered to the market, and second, by changes in consumers' buying power. Commercial supplies, as measured by commercial production plus receipts from Puerto Rico, less exports, are of major importance in explaining changes in prices received by growers. Change in consumer demand is of next importance. Families in the salaried workers groups and higher income groups are the principal consumers of oranges. The demand for oranges changes as the average budgets of these groups of people change. Loans and investments, minus time deposits, of member banks of the Federal Reserve System serve as a reasonable index in this connection.

A study of the United States farm price of oranges relating to the 12-year period beginning with the season of 1921-22 and extending through the 1932-33 season, reveals that under demand conditions equal to those prevailing for the 1931-32 marketing season, a 10-percent decrease in commercial supply from 40,000,000 boxes results in a 35-percent increase in the farm price. It further reveals that under the demand conditions given a commercial supply of 45,000,000 boxes is likely to return \$33,750,000 to the orange growers of the United States, whereas a commercial supply of 25,000,000 boxes is likely to return to them \$83,750,000. The fact that charges between the producer and consumer represent a high percentage of the consumers' price accounts for this situation. A small change in market price results in a large percentage change in the price to growers because total marketing charges remain relatively fixed. In other words, growers as a group, therefore, within certain limits, stand to gain materially from shipping small rather than large supplies to market. For various reasons, however, it would not be advisable to reduce a commercial supply of 45,000,000 boxes to 25,000,000 boxes because it would result in bringing undue hardship to packing plants and transportation facilities, and it would be difficult to use so large a surplus quantity in byproducts form or to render it inedible.

Farm price as it is here used, means or represents the California farm price and the Florida farm price weighted by shipments and production. Thus weighted it represents a fair average of the farm price of oranges for the industry.

If demand conditions exceed those of 1931-32 the total return to growers will, of course, be raised to a higher level, but it would still



be true that the growers would receive a greater return for a small supply than for a large supply. The relationship between farm price

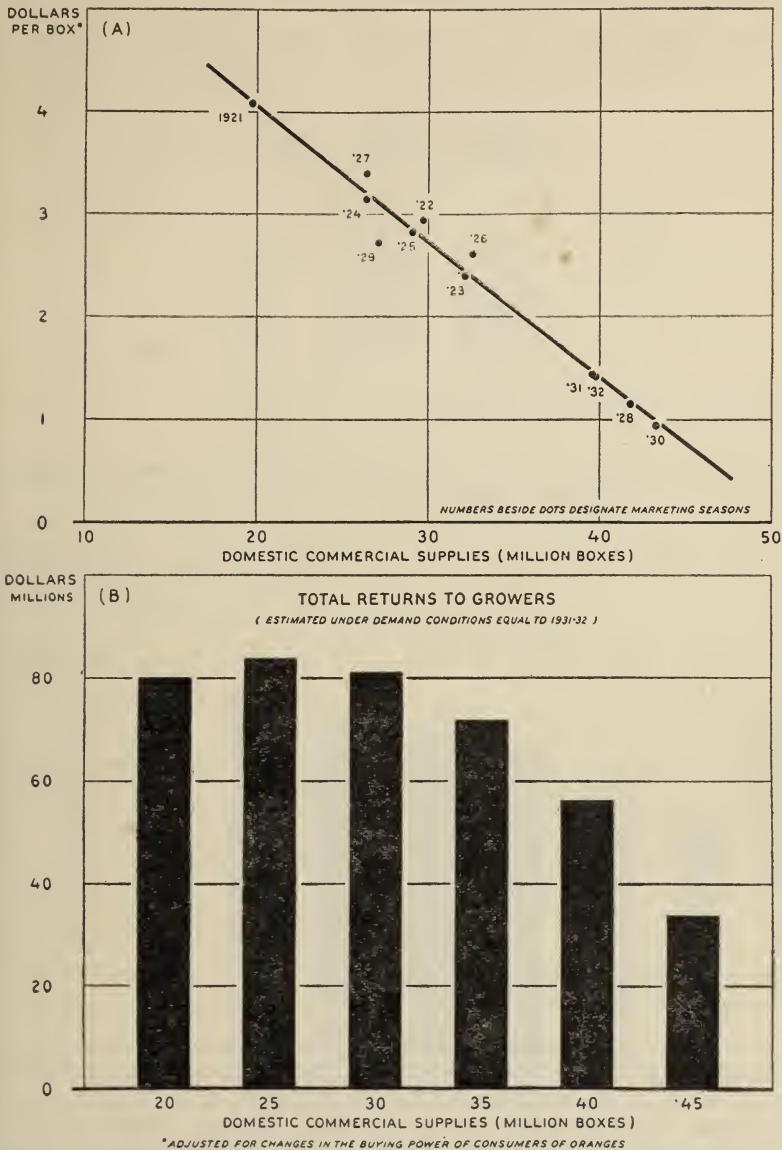


FIGURE 6.—UNITED STATES ORANGE PRICES: RELATION BETWEEN DOMESTIC SUPPLIES, FARM PRICE\*, AND TOTAL RETURNS TO GROWERS

(A) The farm price of oranges in any season is very closely related to commercial supplies put on the domestic market; (B) Within certain limits returns to growers increase as commercial supplies decrease. Except for variations in exports, commercial supplies are closely related to production. (Data from table 8.)

and net commercial supplies and returns to growers is shown in figure 6. The relationship between net commercial supplies and

estimated total returns to growers under demand conditions equal to those of 1931-32 is given in table 7 and data used as a basis for the price study are given in table 8.

TABLE 7.—*Relationship between United States commercial supply of oranges and total returns to growers, under demand conditions equal to those of 1931-32*

Net commercial supply	Calculated total returns to growers	Average return per acre <sup>1</sup>
1	2	3
<i>Boxes <sup>1</sup></i>	<i>Dollars</i>	<i>Dollars</i>
20,000,000	80,000,000	174
25,000,000	83,750,000	182
30,000,000	81,000,000	176
35,000,000	71,750,000	156
40,000,000	56,000,000	122
45,000,000	33,750,000	73

<sup>1</sup> Based on a total bearing acreage of 460,000 acres.

SOURCE OF DATA: Columns 1 and 2 based on line in section (A) of figure 6.

TABLE 8.—*United States commercial supply and farm price of oranges adjusted for changes in consumer demand, 1921-22 to 1932-33*

Crop year	U.S. commercial supply of oranges	Farm price	Adjustment for changing demand	Adjusted farm price
	1	2	3	4
	<i>1,000 boxes</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
1921-22.....	19,683	3.13	+0.96	4.09
1922-23.....	29,660	2.16	+ .78	2.94
1923-24.....	32,217	1.76	+ .64	2.40
1924-25.....	26,454	3.05	+ .10	3.15
1925-26.....	29,078	2.95	— .12	2.83
1926-27.....	32,615	2.82	— .20	2.62
1927-28.....	26,435	4.00	— .60	3.40
1928-29.....	41,780	2.02	— .86	1.16
1929-30.....	27,059	3.78	—1.05	2.73
1930-31.....	43,342	1.80	— .86	.94
1931-32.....	39,563	1.46	± .00	1.46
1932-33.....	39,846	1.12	+ .30	1.42

#### SOURCES OF DATA

Farm price from the Divisions of Statistical and Historical Research and Crop and Livestock Estimates; weighted by production.

Commercial supply from table 3.

A study covering grapefruit shows that the year-to-year changes in the prices that growers receive for grapefruit are determined by the commercial production and by the buying power of consumers in a manner similar to that in the case of oranges. For the past 12 seasons, beginning with 1921, grapefruit prices can be almost wholly accounted for in terms of these two factors. Adjusted for changes in the buying power of consumers, the price to growers is very closely related to changes in the commercial production. Commercial supplies are related to price in such a way that under demand conditions equal to those of 1931-32, a supply of 10,000,000 boxes would return over \$5,000,000 more than would a supply of 15,000,000 boxes. The

graphic and tabular presentation is given in figure 7 and table 9. Supporting data for the price analysis are given in table 10. It is

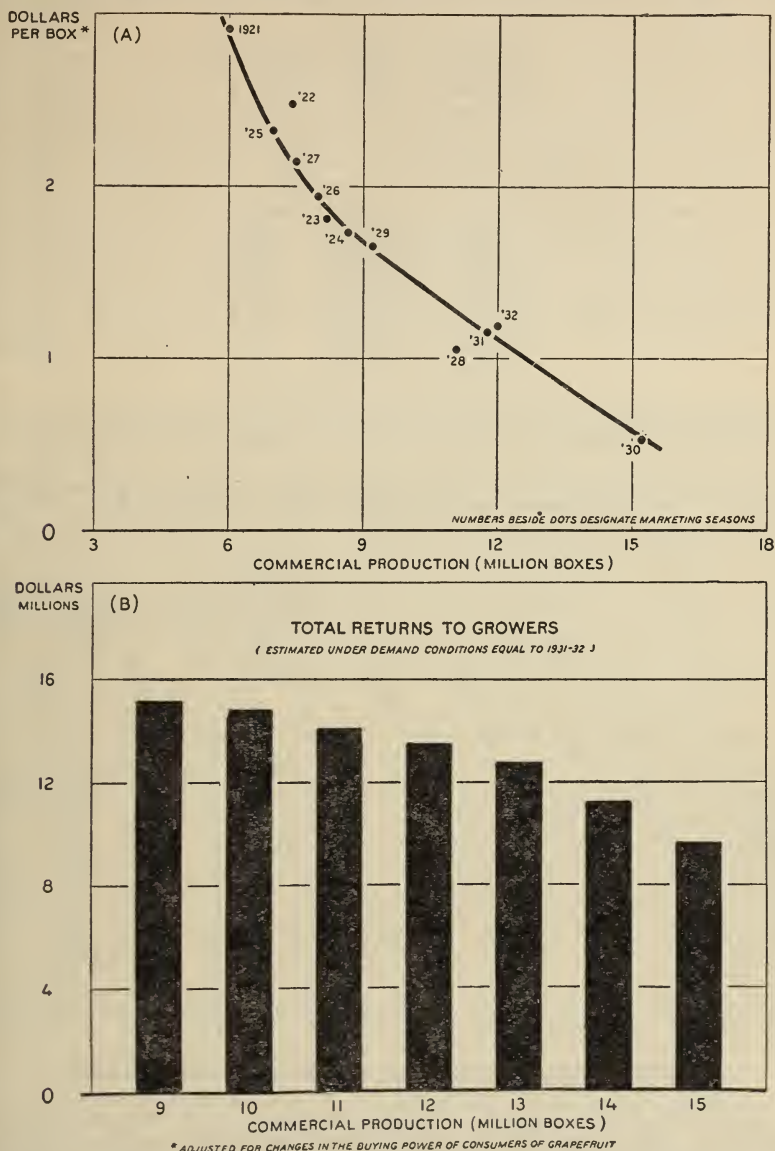


FIGURE 7.—UNITED STATES GRAPEFRUIT PRICES: RELATION BETWEEN COMMERCIAL SUPPLIES OF GRAPEFRUIT, FARM PRICE\*, AND TOTAL RETURNS TO GROWERS (Data from table 10.)

- (A) The farm price of grapefruit in any season is very closely related to the commercial production.  
 (B) Within certain limits returns to growers increase as production decreases. Commercial production as it is here used includes grapefruit used for canning and receipts from Puerto Rico.

clear therefore that the present distressed condition of grapefruit growers would be greatly improved through a program involving the restriction of commercial supplies of grapefruit.

TABLE 9.—*Relationship between United States commercial supply of grapefruit and total returns to growers, under demand-conditions equal to those of 1931-32*

U. S. commercial production plus grapefruit used for canning	Calculated total returns to growers	Average returns per acre <sup>1</sup>
1	2	3
<i>Boxes</i>	<i>Dollars</i>	<i>Dollars</i>
6, 000, 000	17, 100, 000	113
7, 000, 000	16, 100, 000	107
8, 000, 000	15, 600, 000	103
9, 000, 000	15, 120, 000	100
10, 000, 000	14, 800, 000	98
11, 000, 000	14, 080, 000	93
12, 000, 000	13, 440, 000	89
13, 000, 000	12, 740, 000	84
14, 000, 000	11, 200, 000	74
15, 000, 000	9, 600, 000	64

Based on a total bearing acreage of 151,000 acres of which only one fourth is in full bearing.

SOURCE OF DATA: Columns 1 and 2 based on line in section (A) of figure 7.

TABLE 10.—*United States commercial supply and farm price of grapefruit adjusted for changes in consumer demand, 1921-22 to 1932-33*

Crop year	United States commercial supply of grapefruit	Farm price	Adjustment for changing demand	Adjusted farm price
	1	2	3	4
	<i>1,000 boxes</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
1921-22		1.96	+.95	2.91
1922-23	7,922	1.80	+.68	2.48
1923-24	8,870	1.19	+.62	1.81
1924-25	8,917	1.49	+.24	1.73
1925-26	7,554	2.32	±.00	2.32
1926-27	7,985	1.99	-.05	1.94
1927-28	7,669	2.62	-.48	2.14
1928-29	9,953	1.75	-.70	1.05
1929-30	9,113	2.49	-.85	1.65
1930-31	12,800	1.22	-.70	.52
1931-32	11,416	1.13	+.02	1.15
1932-33	10,069	.87	+.32	1.19

SOURCE OF DATA: Farm price from Divisions of Statistical and Historical Research and Crop and Livestock Estimates; weighted by production. Commercial supply from table 4.

#### MARKET IMPROVEMENT FOR THE BENEFIT OF GROWERS

It has been shown that low prices are in part due to the decline in the purchasing power of consumers, and that low prices are also to a large extent due to excessive supplies. The degree to which it is due to excessive supplies may be corrected through an industry program involving the restriction of supplies offered for sale. It has been shown that a small supply will result in a larger return to growers than a large supply.

In order to take advantage of this situation and relieve the distressed economic status of the citrus growers it is necessary to restrict supply



on an industry basis. Since the benefit accruing from restricting supply is in the form of increased market price, it accrues only from that portion of the fruit which is sold and arises only from the fact that the total supply has been restricted. It is therefore essential that insofar as it is possible, all parts of the industry share in restricting the supply. If any part does not contribute in any way to that which is necessary to bring about an improvement in market price, that part will receive benefit at the expense of those who do make the necessary sacrifice. Benefits accruing to recalcitrant minorities of growers have, in a number of instances, resulted in breaking down efforts designed to benefit the industry as a whole.<sup>3</sup> A program in which each person in the industry would participate equitably would be the ideal method of approach. If all the fruit were owned by one individual, a restriction in volume would, of course, result in withholding from the market fruit which would tend to bring the lowest net returns.

### AUCTION PRORATES

Proration between auction markets is one of the methods suggested by the industry to increase returns to growers during the current season. Fruit auctions must, of necessity, operate on an immediate-delivery basis. Hence, when supplies are excessive and demand weak, prices decline quickly. This phenomenon is what is commonly known by the trade as "glutting the market." Once a price breaks from a glutted market it does not again rise as easily as it fell. This may have significant consequences on private sales because auction prices are commonly used as a basis in private sales. It is, therefore, advisable to maintain a regularity of supply at the primary markets to prevent violent price fluctuations. Insofar as possible an equal pressure on all markets should be maintained.

Oranges are widely distributed throughout the markets of the United States. Nearly all markets are served by both California and Florida, other States supplying only a relatively small proportion of the total. The auction markets are by far the principal markets for both oranges and grapefruit. Orange unloads for the calendar year 1933 at the 10 principal auction markets—New York, Philadelphia, Boston, Chicago, Detroit, Pittsburgh, Cleveland, St. Louis, Baltimore, and Cincinnati—amounted to 64 percent of the total unloads reported at 66 different cities throughout the United States. In terms of total commercial movement these 10 auction markets received 52.2 percent, or slightly more than one half, of the total commercial movement of oranges from all sources. Florida serves auction markets to a greater extent than does California. Of the total commercial movement of oranges from Florida, 67.4 percent, or two thirds, were unloaded in the 10 auction markets just listed.

In the case of grapefruit, unloads reflect a similar situation. During the 1933 calendar year 66.6 percent of the commercial movement of grapefruit from Florida was unloaded at the 10 auction markets listed, and the 66 markets reporting unloads took 72.4 percent of Florida's commercial movement. Texas shipped a much smaller proportion of its movement to auction markets. This is pri-

<sup>3</sup> Stokdyk, E. A. Economic and Legal Aspects of Compulsory Proration in Agricultural Marketing, Giannini Foundation of Agricultural Economics, Bulletin 565, p. 17, December 1933.

marily due to the fact that Florida is closer to the principal markets than is Texas.

Los Angeles and San Francisco are the only important markets that took more oranges and grapefruit than did the least important of the auction markets numerated above. Unloads at Los Angeles in 1933 amounted to 3,242 cars and unloads at San Francisco to 1,468 cars.

Among the primary markets, New York and Philadelphia are the only ones receiving more oranges from Florida than from California. Of the 18,087 cars unloaded at New York, 9,913 originated in Florida, 8,136 originated in California. Many of the oranges going to New York are reshipped to outlying markets. This is also true of Philadelphia and other important auction markets. Total unloads at these markets therefore do not reflect their actual consumption.

There are a number of important markets on the Pacific Coast which receive their full supply of oranges from California and none from Florida. These are: Seattle, Wash.; Portland, Oreg.; and San Francisco and Los Angeles, Calif. A detailed summary of unloads of oranges by States of origin is given in table 11. This table, together with the one showing seasonal movement, illustrates the extent to which oranges from Florida and oranges from California compete in the markets.

TABLE 11.—*Unloads of oranges at 10 auction markets by State of origin, 1933*<sup>1</sup>

[Boat unloads included in car-lot equivalents]

City	Florida	California and Arizona	Other <sup>2</sup>	Total
	1	2	3	4
	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>
New York.....	9,913	8,136	38	18,087
Philadelphia.....	<sup>3</sup> 3,635	2,248	2	5,885
Boston.....	2,403	3,328	—	5,731
Chicago.....	1,318	4,358	5	5,681
Detroit.....	574	1,699	1	2,274
Pittsburgh.....	641	1,344	1	1,986
Cleveland.....	716	1,263	1	1,980
St. Louis.....	269	1,258	11	1,538
Baltimore.....	954	566	—	1,520
Cincinnati.....	766	673	—	1,439
Total 10 cities.....	21,189	24,873	59	46,121
Other cities.....	<sup>4</sup> 6,653	<sup>5</sup> 19,128	<sup>6</sup> 188	25,969
Total 66 cities.....	27,842	44,001	247	72,090

<sup>1</sup> Calendar year, preliminary.

<sup>2</sup> Include unloads from Texas, Georgia, Louisiana, and Puerto Rico. No imports, or unloads from Alabama reported.

<sup>3</sup> Includes 6 cars brought in by truck.

<sup>4</sup> Includes truck unloads at Atlanta of 451 cars.

<sup>5</sup> Includes truck unloads at Los Angeles of 3,226 cars, and at San Francisco of 818 cars.

<sup>6</sup> Includes truck unloads at Salt Lake City of 48 cars.

SOURCE OF DATA: U.S. Department of Agriculture, Bureau of Agricultural Economics, Division of Fruits and Vegetables.

As already indicated, Florida is by far the most important source of grapefruit supplies. Using unloads in 1933 again as a basis of determining distribution among markets, New York took 6,334 cars, or 29 percent of the total unloads of 22,471 cars recorded at 66 differ-



ent markets. In the case of grapefruit, New York took a slightly larger proportion of the total than in the case of oranges.

Here again California and Arizona supply almost wholly the markets on the Pacific coast. Important competition arises between Florida and Texas in the midwestern markets such as Chicago, Detroit, St. Louis, Kansas City, Minneapolis, Indianapolis, and Milwaukee. When the young trees in Texas get into full bearing, the midwestern markets will receive a larger proportion of their supply from Texas.

A detailed summary of grapefruit unloads is given in table 12. It is similar in nature to the summary presented on oranges.

TABLE 12.—*Unloads of grapefruit at 10 auction markets by State of origin, 1933*<sup>1</sup>

[Boat unloads included in car-lot equivalents]

City	Florida	Texas	California and Arizona	Other <sup>2</sup>	Total
	1	2	3	4	5
	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>
New York.....	5,855	15	2	462	6,334
Chicago.....	1,494	327	15	2	1,838
Philadelphia.....	<sup>3</sup> 1,646	3		12	1,661
Boston.....	<sup>3</sup> 1,277		16	12	1,305
Detroit.....	714	63	1	1	779
Cleveland.....	543	28	1	3	575
St. Louis.....	361	178		2	541
Pittsburgh.....	513	14		8	535
Cincinnati.....	501			5	506
Baltimore.....	487			1	488
Total 10 cities.....	13,391	628	35	508	14,562
Other cities.....	<sup>4</sup> 5,108	814	<sup>5</sup> 1,577	<sup>6</sup> 10	7,509
Total 66 cities.....	18,499	1,442	1,612	518	22,071

<sup>1</sup> Calendar year, preliminary.

<sup>2</sup> Includes unloads from Puerto Rico, Cuba, British West Indies, unloads of unknown origin, and unloads designated as imports.

<sup>3</sup> Includes the following cars brought in by truck: Philadelphia, 1 car, and Boston, 9 cars.

<sup>4</sup> Includes truck unloads at Atlanta of 350 cars.

<sup>5</sup> Includes truck unloads at Los Angeles of 841 cars and at San Francisco of 74 cars.

<sup>6</sup> Includes truck unloads at Salt Lake City of 7 cars.

SOURCE OF DATA: U.S. Department of Agriculture, Bureau of Agricultural Economics, Division of Fruits and Vegetables.

Stokdyk came to the conclusion that planning the distribution to auction markets would enhance the average price received for California Tokay grapes.<sup>4</sup> In a study of the marketing of California Tokay grapes he derived certain relationships between prices and volumes going to different markets which led him to conclude: "The data obtained in this study indicate two outstanding problems which necessitate industry-wide participation for their solution. The first problem is how to restrict the volume marketed in years of large crops or low consumer purchasing power or both. The second is how to distribute supplies among the principal market areas in order to obtain the highest total returns with a given volume to be marketed."

It is the opinion of a substantial majority of the members of the trade in the Florida citrus industry that an auction prorate would raise the general level of prices at all markets.<sup>5</sup>

<sup>4</sup> Stokdyk, E. A., Marketing Tokay Grapes, California Agricultural Experiment Station, Bulletin 558, p. 26, 1933.

<sup>5</sup> See record of the public hearing covering the proposed marketing agreement relating to citrus fruits in Florida. U.S. Department of Agriculture, Agricultural Adjustment Administration, Doc. No. 43-a-b-c, Sept. 9, 1933, especially p. 656.

## RESTRICTION OF LOW GRADES

An ideal program of volume restriction is one based on surveys of the total fruit of each grower and a restriction in shipments of the same percentage of each grower's crop. To execute a program of this nature would require extensive surveys which were not practical in the current year.

The restriction of low-quality fruit offers a further means of accomplishing in a large measure what might otherwise be accomplished under a straight volume prorate program. Terminal markets reflect a wide variation in price, which is due in a large measure to variations in quality. An examination of New York auction prices for given weeks in 1932-33 reveals a spread in excess of \$1.00 per box between the high 20 percent of sales by volume and the low 20 percent. For similar weeks during the current season the spread between the average high and the average low was slightly less than a dollar a box. This variation in auction prices is shown in table 13. If the identity of these groups were maintained and growers paid in accordance to the price received in the market, it would mean that they would receive only a very small amount for the low groups and roughly a dollar a box more for the high group than for the low group, because it would cost the same amount to market the low group as it would to market the high group. Putting it in another way, again assuming sales to be kept separate and growers paid accordingly, should the market go to a point where the low group returned nothing to growers, the high group would still be returning growers \$1.00 a box. This illustrates a principal that points to the advisability of restricting the movement of low-quality fruit in a program designed to benefit growers.

TABLE 13.—*Variation in auction prices because of differences in quality, by specified weeks, based on Florida oranges at New York auction*

Week	High group <sup>1</sup>	Low group <sup>1</sup>	Difference between high and low groups
	1	2	3
1932-33:			
Dec. 5-9, 1932.....	\$4.22	\$3.13	\$1.09
Jan. 9-13, 1933.....	3.75	2.49	1.26
1933-34:			
Dec. 4-8, 1933.....	2.86	1.89	.97
Jan. 4-12, 1934.....	3.11	2.30	.91

<sup>1</sup> Representing 20 percent of sales.

SOURCE OF DATA: Compiled from New York Daily Fruit Reporter.

## PRODUCER'S SHARE OF CONSUMER'S DOLLAR

Orange growers receive only a very small proportion of a dollar spent for oranges by consumers. In recent seasons the orange producer has received a smaller proportion than formerly, due to the fact that charges incurred between the producer and consumer have remained relatively fixed in the face of substantial market price declines of oranges. A division of the consumer's dollar spent for

oranges as prepared by the California Fruit Growers' Exchange reveals (see fig. 8) that during the 5-year period 1927-31, the grower received 40 cents of each dollar spent by the consumer for oranges. For the 1932-33 season the grower received only 26 cents for every dollar spent by consumers for oranges. During 1927-31 the retailer received 27 cents, and the transportation charges amounted to 16 cents. In 1932-33 the retailers' margin amounted to 29 cents and transportation 24 cents. Thus at prices as low as those prevailing in recent months, the retailer receives a larger proportion of the consumer's dollar than does the grower. A small increase in the market price will greatly enhance the returns to producers; a large

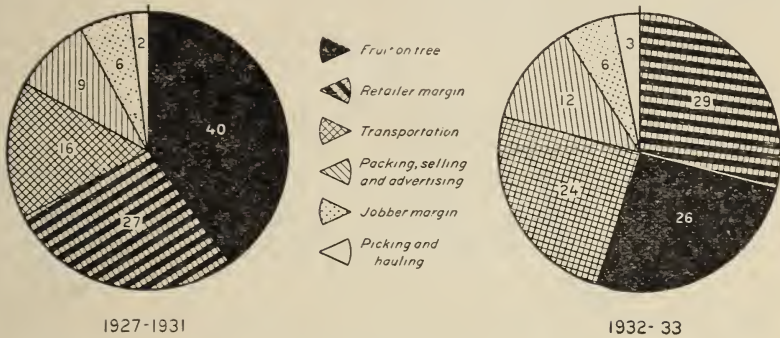


FIGURE 8.—DIVISION OF CONSUMER'S DOLLAR SPENT FOR ORANGES.

	1927-1931		1932-33	
	Dollars per box	Percent	Dollars per box	Percent
Consumer price.....	7.85	100	4.75	100
Retailer margin.....	2.14	27	1.38	29
Jobber margin.....	.48	6	.30	6
Transportation.....	1.24	16	1.12	24
Packing, selling, and advertising.....	.69	9	.56	12
Picking and hauling.....	.17	2	.13	3
Fruit on tree.....	3.13	40	1.26	26

Data from California Fruit Growers' Exchange.

proportion of the market advance will be reflected back to them because marketing and transportation costs should remain relatively stable.

#### BRIEF EXPERIENCE ILLUSTRATES EFFECTIVENESS OF AN INDUSTRY PROGRAM IMPROVING RETURNS TO GROWERS

Market price behavior during a brief period of effective operation of the marketing agreement and license serves to illustrate possible increases in the returns to growers. This may be illustrated from figure 9 and table 14. The New York auction price of Florida oranges for the week ended December 15, 1933, averaged \$2.07 a box. Considering transportation and selling charges on fruit shipped via boat, this would mean a return of approximately 40 cents a box to the grower shipping through Tampa, Fla., and 50 cents a box to the grower shipping through Jacksonville. For the week ended January 12, 1934,



a week reflecting an effective operation of the marketing agreement and license, the New York auction price of oranges averaged \$2.66 a box. With transportation and selling charges remaining practically the same via boat, the grower's price becomes 99 cent a box through Tampa and \$1.09 through Jacksonville. This represents an increase of 59 cents a box. In mid-January regulations of shipments were withdrawn. The New York auction price for Florida oranges for the week ended February 2, 1934, averaged \$2.12 or practically the same as the price which prevailed prior to the approval of the marketing agreement and license. This reflected back to the grower, meant

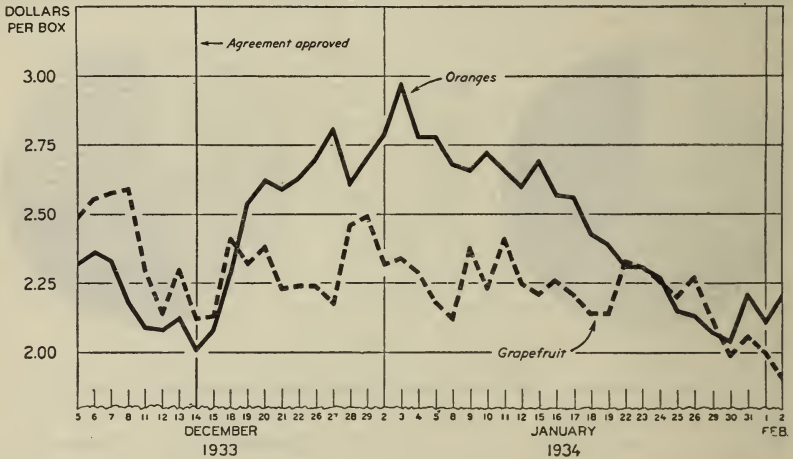


FIGURE 9.—NEW YORK AUCTION PRICES OF FLORIDA ORANGES AND GRAPEFRUIT, USING MARKET DAYS ONLY, DECEMBER 5, 1933, TO FEBRUARY 2, 1934

Market prices of oranges strengthened greatly following the final approval of the citrus marketing agreement. Important control measures were adopted for oranges and practically no control measures were adopted in the case of grapefruit, the consequent difference in the price trends is striking. Legal proceedings made it necessary to withdraw prorate orders in mid-January. The rise in the market price of oranges which occurred from mid-December to early January amounted to 75 cents a box. (Data from the New York Daily Fruit Reporter.)

54 cents a box decline for the value on the tree. On February 20, 1934, control was again undertaken; the average market price for 6 days ending March 6 had risen to \$2.86 a box representing an increase in the calculated price on the tree of 74 cents a box.

TABLE 14.—Calculated on tree value of Florida oranges for specified weeks

Shipping point	Week ending	Average auction price at New York	Charges from tree to auction <sup>1</sup>	Approximate on-tree value	Change in on-tree value
1	2	3	4	5	6
Tampa-----	Dec. 15, 1933	\$2.07	\$1.67	\$0.40	-----
	Jan. 12, 1934	2.66	1.67	.99	+\$0.59
	Feb. 2, 1934	2.12	1.67	.45	-.54
Jacksonville-----	Mar. 6, 1934	2.86	1.67	1.19	+ .74
	Dec. 15, 1933	2.07	1.57	.50	-----
	Jan. 12, 1934	2.66	1.57	1.09	+ .59
	Feb. 2, 1934	2.12	1.57	.55	-.54
	Mar. 6, 1934	2.86	1.57	1.29	+ .74

<sup>1</sup> Using boat as means of transportation.

SOURCE OF DATA: New York auction price from New York Daily Fruit Reporter.

The California Fruit Growers Exchange, whose members produce about 70 percent of the California orange production, has recognized the gains to growers obtainable through regulation of quantities moved to market. Their annual report for the year ending October 31, 1933, states, "With an inadequate percentage of control (approximately 70 percent of California and 43 percent of national orange production) the Exchange has done what it could alone to regulate shipments for a number of years, and during the present season, in cooperation with other shippers, has jointly maintained a stabilization program for the Valencia variety. This program has unquestionably improved Valencia returns over what they would otherwise have been, but the parties to the Valencia stabilization agreement, estimated to represent 94 percent of the tonnage, were continually harassed and best results obstructed by the 6 percent outside the agreement, who in the first 2 months of operation moved 15 percent, or two and one half times their normal proportion, and who have consistently exceeded their percentage of shipments throughout the season." All California citrus marketing agencies are now operating under a marketing agreement and license under which the objectives that have heretofore been sought by a large majority of the growers in that State are now being attained.



